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MONTEREY, CALIFORNIA

THESIS

**PARENTAL DIVORCE AND MIDSHIPMEN
PERFORMANCE AT THE UNITED STATES NAVAL
ACADEMY**

by

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June 2004

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**PARENTAL DIVORCE AND MIDSHIPMEN PERFORMANCE AT THE
UNITED STATES NAVAL ACADEMY**

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Lieutenant, United States Naval Reserve
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This study examines the relationship of parental divorce to the performance of Naval Academy Midshipman. Parental Status was determined by the ACE survey, which is completed in the plebe year. Parent Status of midshipmen is merged with Institutional Research Data to determine effects of parental divorce on midshipmen performance. For the purposes of the study, numerous aspects of performance are measured: (1) academic grade point average, (2) military grade point average, (3) conduct, (4) attrition rates, (5) participation in varsity athletics, and (6) leadership responsibilities. The common expectation is that midshipmen from divorced families will perform lower than midshipmen from intact families. Lower performance was noted in academic and military grade point averages, attrition, and participation in varsity athletics among midshipmen from divorced families. No significant difference in performance was noted in conduct or leadership responsibilities.

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I. INTRODUCTION

Midshipmen at the United States Naval Academy endure high levels of stress on a daily basis. The nature of the institution places value on this stress, which is deemed necessary to prepare these young men and women to become combat leaders. Highly challenging academics, leadership responsibilities, and adherence to strict policies are all included in the prescribed stressors. These challenges are a consistent part of the Naval Academy culture and the midshipman experience. What can make each experience different however is what the midshipman brings with him or her in the form of parental and family and history.

A. BACKGROUND

As the young men or women report for their first day at the Naval Academy, or Induction Day as it is called, they are quickly initiated into the strict discipline of the freshmen, or Plebe year. They stand in line to receive numerous issued items they will find necessary for their new military life. A line of barbers flanking chairs await each to render shocking new hairstyles. Table upon table of strangers ask questions, request signatures, and offer information. There is a purpose behind the confusion and unfamiliarity. When the time comes for those young men and women to raise their right hand and take the oath in the induction ceremony, fright, insecurity, and bewilderment play a large part of their emotions. It places every new midshipman on the same level.

For indoctrination purposes, this strategy works brilliantly. However, when the midshipmen begin to learn, and are expected to perform, many other variables play a role in how well they perform. One of these variables is the combination of individual personal experiences and how they affect each young adult's development. In the stage of pre-adulthood, external factors significantly affect individual development. Parents, family, and peers have an incredible impact on certain characteristics such as maturity, personality style and confidence. As midshipmen, these characteristics are extremely important and determine how well one will adapt to the new situation. There is great diversity in the experiences of each midshipman prior to reporting to the Naval Academy, and it is reasonable to say that on a developmental basis, no two midshipmen truly begin on the same level.

Many types of external stressors can have an effect on the performance of a midshipman at the Naval Academy. Relationships with peers from home before, during, and after the Academy can have an enormous effect on these young adults. Intimate relationships can blossom, adapt, or end during the four years, and can become a very important factor in one's ability to concentrate. Additionally, parents can play a large role in a midshipman's success. If a strained relationship with a parent exists, regardless of the cause, there may be a lack of much needed support, which in turn could create performance fluctuations.

Although many developmental and relational factors impact the success of USNA midshipmen when it comes to adjusting to and succeeding at the Academy, parental divorce may be a particularly important and relevant variable to study. According to the U.S. Bureau of the Census in 1998, about one million children each year will see, and are intimately involved in the breakup of their parent's marriage. Because of these astonishing numbers, a considerable amount of research has attempted to determine the effects of divorce on children, adolescents, and young adults. It is clear that divorce brings changes to parent-child relationships. Wallerstein, Lewis, and Blakeslee (2000) noted that parenting becomes less stable, more volatile, and less protective following divorce. Because parents are concentrating on rebuilding their own lives and dealing with numerous other causes such as stress, emotional disturbance, and economic deprivation, the needs of children are often neglected.

The effects of parental divorce on children are many, however most applicable to this study regarding midshipmen are the documented effects on academics, behavior, and self perception. Some findings suggest lower academic performance, negative behavioral changes, and diminished self-esteem. This study will concentrate on these areas of a midshipman's life, in order to determine if a relationship exists between performance (academic, athletic, military) and parental divorce.

According to the American Council on Education's (ACE) Survey for the American College Freshmen, approximately one out of four college students have parents who are divorced or living apart (Sax, Lindholm, Astin, Korn, & Mahoney, 2002). For the Naval Academy classes of 1999 to 2003, the cohorts investigated here, approximately

one out of five midshipmen have parents who are divorced or living apart. Although slightly lower than the national norms, a significant proportion of USNA students have divorced parents. The current study will evaluate the effects of divorce on subsequent adjustment and performance.

B. PURPOSE

The purpose of this study is to help the Naval Academy leadership obtain a snapshot of the uniqueness of the brigade of midshipmen. This facet of a midshipman's life has not been studied here before, therefore this investigation will provide a better understanding as to how one variable, parental status, may or may not affect performance.

The results will not be used to make policy recommendations, nor will they be used to explain why divorce causes certain psychological effects. These results will simply provide a better understand of the midshipman as a whole person, which in turn will help to create better leaders.

C. SCOPE AND METHODOLOGY

1. Research Questions

The primary research question of this thesis will be to determine any relationship between academic and military performance of midshipmen and parental marital status. A secondary research question will be to determine if there exist any trends between parental marital status and certain aspects of performance such as behavior, leadership responsibility, attrition, and participation in athletics.

2. Scope

Five cohorts of midshipmen, specifically the classes of 1999 to 2003, are examined to determine their relative performance while at the Naval Academy. Performance is determined by a combination of the following variables: Academic grades (Academic CQPR), military grades (Military CQPR), attrition, participation in varsity athletics, and leadership positions held (3 stripes or more).

Parental marital status is determined by analyzing archives of the American Council on Education's (ACE) Survey for the American Freshmen. This survey is taken by every freshman (Plebe) at the Naval Academy. The survey collects demographic data

and proposes questions regarding self perception, goals, behavior, and future expectations. The purpose of the survey is to determine how college affects students during the first year.

There are many modifying factors which can influence the effects of divorce on children and adults. Age at the time of the divorce, nature of the divorce, siblings, and changes in lifestyle after the divorce are only a few of the many that have been found to be significant (Schwartz and Kaslow, 1997). These modifying factors remain unknown for this study. However, this thesis will simply look at the relationship of performance between midshipmen from divorced families and those from intact families.

3. Methodology

The first important step in this study will be a thorough review of the plethora of studies regarding parental divorce and its effects on children and adults. It is important, since the midshipmen's ages at time of divorce are unknown, to research effects found at all ages. Studies pertaining to young children, adolescents, and young adults are referenced. Finally, specific studies regarding college students and the effects of divorce are referenced.

Two sources of data were obtained from the Naval Academy Office of Institutional Research (IR). The first source was collected from archives of the ACE survey. This data collection was used to determine parental marital status. The second source of data was collected from the midshipmen records held in the Institutional Research database.

By utilizing descriptive statistics, a snapshot of the sample was obtained. Although the numbers were smaller than the actual class sizes, the samples were very similar with regards to demographics. All demographic groups within the sample are representative of the overall population within a few percentage points. Additionally, inferential statistics will be used to determine relationships between midshipmen from divorced families versus midshipmen from intact families.

D. ORGANIZATION OF STUDY

This thesis is organized into five chapters. Following the introduction will be an in-depth literature review which will take into account many studies with various findings relating to the effects of parental divorce on young children, adolescents, young adults, and adults. The review will then concentrate on specific studies relating to the effects of parental divorce on college undergraduates, which are most applicable to the research questions of this thesis.

Chapter III will discuss the methodology of the study and some theory behind the statistical analyses utilized. Chapter IV will present the results of the statistical analyses. Chapter V will discuss possible explanations for the findings, implications of the study, specific limitations, and recommendations for further study.

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II. LITERATURE REVIEW

A. INTRODUCTION

This chapter will concentrate on reviewing the existing research regarding the effects, both short and long term, on the children and adults who experience the divorce of their parents. Prior to determining if Naval Academy midshipmen from divorced families demonstrate any significant differences in performance compared to those from intact families, it is important to distill and understand the findings of previous studies. Some research has focused the effects of divorce on young children, while other studies focus on adolescents and young adults. This chapter will briefly discuss results from each of these age groups.

After a review of divorce research completed on young children and adolescents, studies regarding the effects of divorce on young adults and college undergraduates will be reviewed. There exist numerous studies regarding this age group, and this strand of divorce research is particularly applicable and necessary to understand the results of the current study at the Naval Academy. This review includes literature generated from computer searches of scientific journal abstracts through the PsycINFO database. Additionally, empirical and theoretical contributions from books, chapters, and Dissertation Abstracts were reviewed. The organization of this chapter is designed to support the current study, reviewing the findings regarding divorce effects on children, adolescents, and young adults, respectively. The final section briefly assesses studies that have found positive outcomes in children of divorce. This section is intended to support the hypothesis that minimal differences in performance measures will be found between midshipmen from intact families and midshipmen from divorced families.

B. DIVORCE STATISTICS

The act of divorce has become widely accepted in society today. Although the divorce rate nationwide is on the decrease, hundreds of thousands of children each year still experience the dissolution of their parents' marriage.

According to the 1998 Census Bureau, between 1970 and 1996 the proportion of children living with one parent grew from 12 percent to nearly 30 percent. About one

million children per year are intimately involved in the breakup of their parents marriage (U.S. Bureau of the Census, 1998). This experience has generally been considered a significant life event having stressful consequences for both the divorcing couple and their children (Bloom, Asher, & White, 1978; Fulton, 1979; Kukla & Weingarten, 1979).

Nationwide, only 40% of college-age people have parents who are married to each other. Of the remaining 60%, roughly 15% have parents who have never married, 15% have a divorced mother who has not remarried, and 25% have parents who divorced and remarried. A full 40% of white, Asian, and Mexican American children and 75% of black and Puerto Rican American children have lived alone with their unmarried mother before their 18th birthday (Nielsen, 1999).

These statistics raise significant questions about the effects of divorce on children—regardless of the age of the child at the time of the divorce. For this reason, researchers have devoted an enormous amount of energy and time to understanding the ways in which children are affected by the dissolution of their parents' marriages.

In general, findings consistently show that children experience distress during the process of parental separation and divorce and that it is associated with a variety of short- and long-term negative outcomes (see reviews by Anthony, 1974; Fry & Addington, 1985; Kelly, 1988; Kurdek, 1981; Long & Forehand, 1987; Lopez, 1987; Santrock, 1987). Although not all the effects of divorce can be clearly described as negative, most studies appear to concentrate on pathology or clinical distress following divorce. The clinical literature focuses on cases of young children with psychological problems following the break up of their parents. Some of the studies regarding the effects of divorce on children have been done by practicing clinical professionals. Gately and Schwebel (1992) stated that many early studies viewed the divorced family as “inferior”. Not surprisingly, the results of these studies paint an exclusively negative view of divorce effects because the clinical samples are questioned immediately following the crisis period (Bernstein & Roby, 1962; Kalter, 1977; Levitin, 1979; McDermott, 1968; Westman, 1972).

C. EFFECTS OF PARENTAL DIVORCE ON YOUNG CHILDREN

The age of children at the time of divorce as well as the developmental stage that the child is in will determine to a considerable extent how they will comprehend and react in the short term to changes such as parental separation, divorce, or stepfamily formation. Although simply being young at the time of divorce is not a risk factor itself, it is important in predicting the reactions and behaviors immediately following the separation (Prior & Rodgers, 2001). These short term effects in early age children are well documented. Studies indicate that children may experience difficulties in interpersonal relationships, school behavior, academic achievement, self-esteem, and in future life outlook (Gatley & Schwebel, 1992). Additionally, low self-esteem, feelings of insecurity and perceived abandonment are common in the aftermath of parental divorce (Glenn and Kramer, 1985).

Numerous studies support the finding that young children of divorce exhibit more problems of psychological adjustment, academic achievement, conduct, and interpersonal relations than do children living with continuously married parents (Demo and Acock, 1988; Hetherington & Camara, 1988, Krantz, 1988). Most notable among these outcomes is the finding that many children seem to blame themselves, when subject to divorce at a young age, believing that it was somehow their behavior or performance that had caused the separation (Wallerstein, 1987). Regardless of the promises made for improved behavior, either to themselves or out loud, their anxiety and distress may result in regressive behavior (Schwartz & Kaslow, 1997).

The gender of the child has been established as a mediator for adjustment outcomes following divorce (Fry & Addington, 1985). The impact of divorce has been found to be greater on young boys than on young girls, with boys more frequently evidencing post-divorce behavioral disturbances (Heatherington, Cox, & Cox, 1978; Wallerstein & Kelly, 1980). With the higher incidence of father absence following marital dissolution, boys are deprived of their same-sex role model and are thus more developmentally affected.

To summarize the significant body of research focused on the importance of divorce on children, it is reasonable to conclude that children can be affected in many

different ways by parental divorce. The differences in effects of divorce on young children are due to some mediating factors. Gender, age, and the type and severity of the divorce have all been found to influence the extent to which children are affected. The majority of the findings show negative outcomes, as most of the children studied come from clinical samples. Some of the most common documented effects are psychological adjustment problems, lapses in behavior, poor academic performance and lack of achievement, and difficulty with interpersonal relations. These problems, if not addressed by parents, a support network, or a professional, can lead to further troubles in the adolescent stage of development.

D. EFFECTS OF PARENTAL DIVORCE ON ADOLESCENT CHILDREN

Adolescence is the developmental period in which an individual is particularly vulnerable (Daniels, 1990). Therefore, it is very important to examine the impact of family disruption on this period in a young person's life. Both parents strongly influence a child's development, especially in the adolescent years when a child requires an environment of security in which there is love and acceptance. A divorce means that both parents will no longer be equally available. Parents often are under considerable stress after the divorce and may be incapable of providing warmth or control. They may be less affectionate, inconsistent in applying discipline, uncommunicative, or unsupportive (Craig & Baucum, 2002). For these reasons, adolescents seem to be at more of a risk for experiencing the documented negative effects. Hetherington and Stanley-Hagan (1999) note that, "Compared to their peers in nondivorced homes, adolescents in divorced families are two to three time as likely to drop out of school, to become pregnant, or to engage in antisocial and delinquent behavior..." (p. 131).

Although studies of psychiatric disorders during adolescence have found a fairly low incidence of moderate to severe depression, in those who are affected the symptoms may be life-threatening (Peterson, Compas, Brooks-Gun, Stemmler, Ey & Grant, 1993). An additional study shows an increase in depression during the teenage years, although not extremely high, but peaking at age 16 and again at age 19 (Connelly, Johnston, Brown, Mackay, & Blackstock, 1993). These findings seem to disprove the assumption that adolescents are at a disadvantage in the realm of adjustment and development due to stress and depression as compared to younger children. However, these studies utilized

random samples of high school adolescents without regard to external stressors. For adolescents who are experiencing the external stressor of parental divorce, it seems reasonable that attention should be paid to the possible risk of depression and other disorders.

Craig & Baucum (2002) report that adolescents use a variety of coping responses to deal with the stress of their daily lives. Many of the mechanisms are positive, such as setting priorities or finding a close friend or confidant. Under heavy stress, the use of more negative defense strategies increases. In general, research has found that substance use, diversions, and rebelliousness are major ways in which adolescents cope with stress. Some results of these negative coping mechanisms have been early teen pregnancy, mood disorders, and overall vulnerability. Few adolescents who are under extreme stress feel they can deal with the stress directly—they often lack the resources (Mates & Allison, 1992). Parental divorce can be a direct cause for this lack of resources for a struggling adolescent requiring necessary parental support.

Most theorists agree that adolescents must confront two major tasks which can be a challenge in the best of circumstances, let alone in the context of divorce (Craig & Baucum, 2002). These tasks include:

1. Achieving autonomy and independence from their parents (although this varies among cultures).
2. Forming an identity which means creating an integrated self that harmoniously combines different elements of the personality (page 132).

In order to successfully move into adulthood, the adolescent must attain these developmental tasks. But when a situation arises in which parents divorce, it often results in the telescoping, or compression, of these normal developmental tasks (Fry & Addington, 1985). A compression of these tasks means that the teenager must experience these adjustments at perhaps an earlier stage and sometimes with less time for adjustment. Grossman, Shea, & Adams (1980) have reported that parental divorce may cause accelerated identity formation among men in particular. It is reasonable to assume that other adolescents may be affected by an extended identity development period.

Although adolescents require more independence from parents while forming their own identity, it remains important to maintain a strong relationship with both. Because it has been found that parental divorce may cause reduced attachment to the non-custodial parent (White, Brinkerhoff, & Booth, 1985), these necessary relationships are diminished or cease to exist, which can lead to a lack of advice and support documented as important in the development of an adolescent.

It is very important for a child to complete the adolescent stage with a certain confidence in facing the adult world. However, almost half of children from divorced families enter adulthood as worried, underachieving, self-deprecating, and sometimes angry young men and women (Wallerstein & Blackeslee, 1989).

In summary, research shows that adolescents must achieve two major tasks during this stage in their development. They must achieve a healthy independence from their parents and individually form their own identity. This literature review shows that parental divorce can interfere with these important achievements in numerous ways. By causing a reduced attachment to non-custodial parents, the necessary parental support may not exist. Additionally, by adding an external stressor of parental divorce to the child's life, new and more negative coping mechanisms may be adopted. Without the love and support of parents during the documented challenges an adolescent must face, the confidence required to face early adulthood responsibilities may be severely diminished. It is easy to see that these early stressful experiences and the difficulty with adjustment that follows could easily be manifest in negative outcomes in these young adults when they reach college-age.

E. EFFECTS OF PARENTAL DIVORCE ON YOUNG ADULTS AND COLLEGE UNDERGRADUATES

College students face unique developmental demands, many of which revolve around establishing adequate psychological separation from parents and adjustment to the academic and social demands of the college environment (Lopez, Campbell, & Watkins, 1986). Because of this, it is important to research how college age young adults have been affected by the divorce of their parents.

Most research shows that there are differences in the effects of divorce on college age young adults depending on the current status of the mother: (1) the mother has

remarried within a few years following the divorce, and (2) the mother has not remarried (Nielsen, 1999). It is important to note here that the mother is the custodial parent in 90% of divorce cases involving children (Glick, 1979). When the mother remarries within a few years, most children do not suffer long-term consequences in terms of: self-confidence, peer relationships, social maturity, mental health, academic achievement, or vocational accomplishments (Amato, 1994; Ahrons, 1994; Booth & Dunn, 1994; Buchanan, Maccoby, & Dombusch, 1997; Dunlop & Burns, 1995; Emery, 1994; Furstenberg & Teitler, 1994; Furstenberg & Cherlin, 1991; Ganong & Coleman, 1994; Gonzalez, 1995; Lansdale, cherlin, & Kiernan, 1995; Maccoby & Mnookin, 1994; Marsh, 1990; Muransky & Dreblow, 1995; Nielson, 1993; Pasley, Ihinger, & Lofquist, 1994; Zill, Morrison, & Coiro, 1993).

Young adults, both men and women, whose mother has not remarried within a few years of divorce, tend to be at more of a disadvantage than those whose mothers have remarried. They tend to have poorer grades, lower career aspirations, less self-confidence, less self-discipline, less social maturity, and more problems with depression, anxiety disorders, and dependent personality disorders. They also have more trouble becoming self-reliant, setting and achieving goals, and establishing intimate and ongoing relationships. The odds of developing these problems when the mother does not remarry are much greater (Ambert, 1996; Bassoff, 1994; Beer, 1992; Berman, 1992; Block 1996; Brooks-Gunn, 1994, Buchanan, Maccoby, & Dombusch, 1997; Caplan, 1990; Chapman, Price, & Serovich, 1995; Dreman & Aldor, 1994; Emery, 1994; Furstenberg & Cherlin, 1991; Guttman, 1993; Hanson, Helms, Julian, & Sussman, 1994; Hetherington & Jodl, 1994; Lansdale, Cherlin, & Kiernan, 1995; McLanahan & Sandefur, 1994; Pittman, 1993; Silverstein & Rashbaum, 1994; Studer, 1993; Wallertstien, 1991; Warshak, 1992; Weiss, 1994; Zaslow, 1989; Zill, 1994). This is due to the mothers' standard of living, parenting style, mental and emotional well-being, and her self-reliance (Nielsen, 1999).

Gender differences have also been noted among young adults from divorced families. Moore and Hotch (1982) found parental divorce and emotional separation from parents to be significantly related to leaving home at an earlier age for men but not for women. Chapman (1977) reported that college males from father absent and step-father families scored lower than males from intact homes on measures of scholastic aptitude

and independence while among college females, there is little correlation between cognitive performance and family history (unfortunately different types of parent loss were confounded in this study).

Additional gender differences may be linked to the unique nature of the mother-son relationship following divorce. For example, the son is more likely than the daughter to hear hostile, derogatory, comments about his father, which often weakens the bond between father and son (Depner & Bray, 1993; Greene & Leslie, 1989; Kalter, 1990; Pianta, Egeland, & Stroufe, 1990; Thomas & Forehand, 1993; Wallerstein 1991; Warshak, 1992). A son is also more likely than a daughter to become overly involved with his mother in ways that weaken his relationship with his father and that slow or impede his own social and psychological development outside the family, especially when his mother has not remarried (Corneau, 1991; Emery, 1994; Guttman, 1993; Hetherington & Jodl, 1994; Hetherington, 1991; Pittman, 1993; Silverstein & Rashbaum, 1994; Kalter 1990; Wallerstein, 1991). In general, sons suffer more negative consequences than do daughters after their parents divorce (Nielsen, 1999).

Parish (1981) found no significant differences in self-evaluations regarding physical and psychological attributes of college students from intact and divorced homes. These groups did differ in their evaluations of their parents, with the divorced group rating both parents significantly lower in aspects of being good parents as well as being good people. These group differences were maintained in a three year follow-up (Parish, & Wigle, 1985). In contrast, Boyd, Nunn, and Parish (1983) found that their divorced college sample rated both themselves and their parents less favorably than did their peers from intact families.

Some studies report that divorce disrupts the life-course, with lifelong consequences for adult well-being in two noticeable ways: lowered socioeconomic status and problems in interpersonal relationships. Both variables act as mediators for adult depression (Ross and Mirowsky, 1999). In other words, by not completing high school or attending college, the adult child does not earn a substantial living, leading to eventual

depression. This feeling of inadequacy, when coupled with an inability to form and sustain a meaningful intimate relationship, promotes a decrease in psychological well-being.

Cain (1989) investigated the effects when parental divorce occurred during the college experience. She found that these students, whose parents divorced sometime during college, were less apt to self-blame and more likely to ascribe blame to the parents. They no longer felt as if they caused the divorce, as did many younger children, but lamented the fact that they failed to prevent it. Additionally these college students were found more likely to use aggressive morality as an outlet for the rage. Following the loss of their parents as moral models, they severely restricted their own behavior and avoided opportunities for pleasure.

To summarize, negative effects have been noted in the developmental stage of young adulthood, as well. Gender has been found to be a mediator of certain effects, as well as the status of the mother following the divorce. If the mother remarries within a few years following the divorce, many of the negative effects may be reduced. Not all remarriages have been beneficial for children due to poor step-parenting ability, but in most cases, remarriage has been shown to aid in the reduction of some negative effects of parental divorce. However, if the mother remains unmarried, the odds are greater for the children to have poorer grades, lower career aspirations, less self-confidence, less self-discipline, less social maturity, and more problems with depression, anxiety disorders, and dependent personality disorders. They also have more trouble becoming self-reliant, setting and achieving goals, and establishing intimate and ongoing relationships. In some situations, males may be at a disadvantage due to the absence of their fathers (most divorces end with the mother as the custodial parent). Additionally, young adults may turn to more negative coping measures, such as illicit drug use, unprotected sex, pregnancy, or severe depression. The differences in performance, although not standard throughout the studies, are significant enough to warrant attention, again showing that divorce can be destructive to the developmental cycle.

F. SOME POSITIVE OUTCOMES OF DIVORCE

The proportion of studies in which favorable outcomes are identified is small compared to the proportion that report unfavorable outcomes (Gately & Schwebel, 1992).

With so many documented results of failure in the lives of adult children of divorce, one would think it unlikely that any child of divorce would lead a fulfilling and successful life. There are a few studies which suggest that some children of divorce gain positive lessons from the separation of their parents, or that they are at least more resilient in this situation. This section will discuss those studies in which positive results were discovered.

Bernstein and Robey (1962) were among the first to suggest that successful coping with the demands presented by parental divorce can spur emotional and personality growth in children. Some children may become strengthened in one or more areas after divorce. These individuals develop competencies or grow psychologically because of what they learn while undertaking divorce-related challenges, or because of the changes they experience in self-view as a result of successfully meeting these challenges (Gately & Schwebel, 1992).

A substantial number of investigators have found similar favorable outcomes in children relative either to their pre-divorce status or to matched peers from intact family backgrounds (Gately & Schwebel, 1992; Grossman, Shea, & Adams, 1980; Heatherington, 1989; Kelly & Wallerstein, 1976; Kurdek & Siesky, 1979, 1980a, 1980b, 1980c; MacKinnon, Stoneman, & Brody, 1984; Reinhard, 1977; Richmond-Abbot, 1984; Rosen, 1977; Santrock & Warshak, 1979; Slater, Stewart, & Linn, 1983; Springer & Wallerstein, 1983; Wallerstein, 1984, 1985a, 1987; Wallerstein & Kelly, 1974, 1976, 1980b; Warshak & Santrock, 1983; Weiss, 1979). Because some of these studies compared samples from both divorced and intact families, it is reasonable to assume that the positive outcomes found in children of divorce are not simply a factor of normal child development. Gately and Schwebel (1992) also found that many early studies viewed the divorced family as “inferior”, studying purely clinical samples immediately following the crisis period, concluding that the effects were exclusively negative. (Bernstein & Roby, 1962; Kalter, 1977; Levitin, 1979; McDermott, 1968; Westman, 1972). Although divorce is associated with an initial crisis reaction in most children, long-term consequences are variable. (Heatherington, Cox, & Cox, 1982; Heatherington, 1989).

Some longitudinal studies show long term negative effects on social, emotional, and cognitive functioning of children (Guidubaldi & Cleminshaw, 1985; Heatherington, Cox, & Cox, 1985) while others claim that children may escape long-term negative effects if crisis is not compounded by multiple stressors and continued adversity (Heatherington, 1979, 1989; Heatherington et al., 1982, 1985). Economic strain or excessive hostility between divorcing parents are examples of stressors which could interfere with a child's coping mechanism.

Wallerstein (1983a, 1983b) described a sequence of adjustments a child must make in order to remain on course developmentally despite the divorce of their parents. Developmental success depends on the child's coping resources and support. The sequence includes the following steps:

1. Acknowledge the marital disruption
2. Regain a sense of direction and freedom to pursue customary activities
3. Deal with the loss and the feeling of rejection
4. Forgive the parents
5. Come to feel comfortable and confident in relationships

Garmezy (1981) reported that despite some children experiencing certain common stressors, there were other protective factors which facilitated resilience in these children at risk. The presence of these factors reduces the likelihood of negative outcomes. They included:

1. Positive personality disposition (e.g. active, affectionate, socially responsive, autonomous, flexible, intelligent; possessing self-esteem, an internal locus of control, self-control, and a positive mood).
2. A supportive family environment that encourages coping efforts.
3. A supportive social environment that reinforces coping efforts and provides positive role models.

Besides helping children avoid short-term psychological distress, these resiliency-building factors help strengthen children to cope more effectively with divorce, and

master the stressful life-events they will encounter in the future. This is known as a “steeling effect” (Rutter, 1987).

Gately and Schwebel (1992) report numerous positive outcomes for some children at different stages following parental divorce. The presence of these normal to positive outcomes in children demonstrate that not every child experiences exclusively negative developmental outcomes post divorce. With proper support following the separation, numerous outcomes have been documented.

At the one-year post-divorce time frame, researchers found among some latency age children (7 to 8 years old) who had distanced themselves from parental pressures for allegiance, a more realistic view of the world and increased self-esteem (Wallerstein & Kelly, 1976). Later latency aged children (9 to 10 years old) demonstrated an increased empathy toward one or both parents while providing emotional support to and assumed responsibilities for younger siblings, as well as enhanced interpersonal knowledge and skill. Positive outcomes for adolescents (12 to 18 years old) included increases in maturity, independence, self-esteem, and empathy (Springer & Wallerstein, 1983; Wallerstein & Kelly, 1974).

At the five-year post-divorce time frame, 34% of children possessed high levels of self-esteem and were coping competently at home and school. A number of children at all ages were displaying signs of increased maturity, independence, and empathy (Wallerstein & Kelly, 1980b).

At the ten-year post-divorce some researchers reported increased maturity and empathy evident in children who were pre-schoolers at the time of the divorce. They also reported an increased appreciation of the efforts of their custodial mothers, an increase in financial awareness, and respect for the importance of carefully choosing a marital partner. Many children who were early latency age spoke proudly of their independence and self-sufficiency (Wallerstein, 1987). Children who were in the late latency age during the divorce report having a fuller appreciation of the mate-selection task, and an enhanced inner-strength and sense of realism, determination, and responsibility to self and others (Wallerstein, 1985a).

Heatherington, Cox, and Cox (1982, 1985) found that although children who experienced parental divorce were overrepresented in the maladaptive, insecure cluster,

they were also overrepresented in the opportunistic-competent and caring-competent clusters, two of the clusters that involved successful coping (Heatherington, 1989). They were found to be assertive, self-sufficient, high in self-esteem, and popular. They were also interpersonally skilled and able to deal with stressful and demanding situations.

Gately and Schwebel (1992), through their literature review, summarized four areas in which children from divorced families appear to experience some beneficial outcomes: (a) Maturity (mostly in girls, fostered by increases in responsibility, independence, identity development, realism, and awareness of adult values and concerns), (b) self-esteem (mostly in boys, fostered by being relied upon more by custodial mother), (c) empathy (mostly girls but some boys, fostered by added responsibility of caring for younger siblings and needs of custodial parent), and (d) androgyny (in children whose parents exhibited nontraditional sex-role attitudes and behavior). It is important to note, however, that these beneficial outcomes are present only in a small subset of children who experience parental divorce.

College students with divorced parents are often better than their peers at appreciating and respecting other people's perspectives and being empathetic (Kogos & Snarey, 1995). Many young adults also seemed to have developed more mature, more level-headed attitudes about love and marriage as a consequence of their parents' divorce (Everett, 1993; Nielsen, 1993; Tasker & Richards, 1994).

Further, some authors suggest that the long-term consequences of parental divorce on psychological well-being are often more positive rather than negative (McFarland 1964; Nock, 1982). According to this view, dealing successfully with early negative experiences will leave the person with adaptability and coping ability useful for dealing with problems later in life. It is important to note, however, that it is unclear just how frequently such positive effects occur. It is possible that mean negative effects indicated by the data resulted from weak positive effects on a majority of persons and stronger negative effects on a minority (Glenn and Kramer, 1985).

One explanation for the discovery of improved performance and psychological well-being is the fact that divorce may reduce exposure to dysfunction. When a marriage

is characterized by a high level conflict (i.e. abuse, arguments, blaming), the child may have a sense of relief and escape, followed by improvements in well-being (Amato, 2000).

In summary, the few studies that report positive outcomes of parental divorce note certain trends. The research states that there are specific sequences of adjustments that a child or young adult must achieve in order to reduce the negative effects of parental divorce. When this sequence is successfully completed, children of divorce tend to show emotional and personality growth. Findings of improved interpersonal skills, increased empathy toward others, and added respect for the outside perspectives shows that children of divorce can sometimes interact with others earlier or even better than their peers from intact families. Additionally, some research has shown greater amounts of maturity, interdependence, self-esteem, and the ability deal with stressful and demanding situations. Researchers also note that children who experience parental divorce have a more realistic view of the world. When those children reach young adulthood, they tend to demonstrate sound judgment when choosing partners for relationships.

G. SUMMARY AND IMPLICATIONS

Research shows that the overall reported effects of parental divorce are negative. It seems reasonable that a stressful event such as divorce would cause negative outcomes. These effects of divorce on children have been shown to manifest themselves in many areas of a child's life, as well as in many stages. This chapter has concentrated on three stages of development in a child's life, young childhood, adolescence, and young adulthood with documented effects of divorce in each stage. In early childhood, although age and gender may cause variations, some of the most common documented effects are psychological adjustment problems, lapses in behavior, poor academic performance and lack of achievement, and difficulty with interpersonal relations. In the developmental stage of adolescence, in which children become more vulnerable to stress, there is a greater risk of experiencing the negative effects of divorce. Children must deal with the normal challenges of achieving interdependence and identity formation, in addition to normal social demands. An external stressor such as parental divorce can greatly affect these developmental requirements and ultimately lead to more negative coping

mechanisms. Early sexual activity/pregnancy, drug and alcohol use, mood disorders, and even severe depression may be a direct effect of an overload of stress on adolescents.

The effects which young adults or college-age children demonstrate seem to depend on certain mediating factors. An important factor is the status of the mother following the divorce. Studies have shown that remarriage of the mother tends to alleviate some of the negative effects on sons. If there is no remarriage, men seem to be more negatively affected through the deterioration of the relationship with their father. Additionally the relationship with the mother may become dangerously close, disrupting social growth outside of home. Both men and women have been found to experience difficulties in the realm of forming intimate relationships. Both young men and women have been found by some researchers to give lower self-evaluations with regards to physical and psychological attributes than their peers from intact families.

Despite the many findings of negative effects, there are researchers who have discovered some positive outcomes in children of parental divorce. If children have a strong family and social support base, and successfully follow a proper adjustment sequence, it is possible that children may experience some growth in certain emotional and psychological areas. Higher levels of maturity, independence, and self-esteem, have been documented results of such support. Additionally these children seem to show an improvement in interpersonal relations, increased empathy towards others, and a more realistic view of the world. It is important to note that these positive outcomes have been found in small samples and in even fewer studies.

According to the literature on the effects of divorce on children in the different stages of development, it is reasonable to conclude that the sample to be studied at the Naval Academy will show significant differences in performance depending on the family status of midshipmen. The research would suggest that a comparison of academic achievement at USNA would likely result in lower averages for midshipmen from divorced families. Additionally it would be expected to find significant differences in areas of military performance, level of responsibility attained (striper positions and varsity athletics), and measured behavior (lack of major conduct infraction).

The sample being analyzed in this study is very different from the samples in the literature reviewed in this chapter. This institution is highly selective, taking into account high school academics, participation in athletics and extracurricular activities, as well as interpersonal skills (as measured by the interview with the Blue & Gold Officer). Although there are numerous findings by researchers indicating negative long term effects from divorce, it is hypothesized that the majority of midshipmen from non-intact families have developed resilience or have learned positive coping mechanisms when dealing with the stress directly involved with parental divorce. It seems unlikely that a young candidate, who may be experiencing the reported negative outcomes of divorce, could successfully compete with the best and brightest around the country to gain acceptance. Students who are accepted at the Naval Academy are generally self-selecting and highly adaptive. It is because these midshipmen have had the necessary support, have developed resilience, or have learned to cope successfully, that the differences among midshipmen with different family backgrounds may be minimal. Data from this sample should be useful for the purpose of enlightening our understanding of midshipmen experiences, as well as to challenge certain assumptions we may have regarding children from divorced families.

III. RESEARCH METHODOLOGY

A. INTRODUCTION

This chapter introduces the data set used for this study. It will describe in detail both the independent and dependent variables, as well as discuss the theory behind the regressions used to analyze the variables. Finally, the specific models for this study will be presented and described, with the results of the analyses being covered in Chapter IV.

The cases for this study include midshipmen from the classes of 1999 through 2003. Because the variable Parent Status was determined from the ACE survey, only midshipmen who have taken the ACE survey and volunteered their social security number for tracking purposes could be used (n=4398). The ACE data for those cases was then merged with performance data from the Office of Institutional Research (IR) data warehouse. For all variables, no data are missing.

B. DATA DESCRIPTION AND VARIABLES

1. Data Description

All data for this study were obtained from the IR Data Warehouse located at the Naval Academy. The two independent variables, Gender and Minority Status, were received from the Office of Admissions, where they were recorded as each midshipmen applied for acceptance at the Naval Academy. The third independent variable, Parent Status, was obtained from archives of the American Council for Education's Survey of the College Freshman. The three independent variables are summarized in Table 1.

The Dependent variables, which were the variables identified to measure performance in this study, were maintained in the IR data warehouse. These scores are reported by departments responsible for each area, i.e. academics, military, athletics, and conduct. These departments were responsible for entering raw data into specific databases, which are organized and maintained by the IR Department. The dependent variables are summarized in Table 2.

2. Independent Variables

The three independent variables were used to determine if the focus variable, Parent Status, had any significant effect on the performance of midshipmen at the Naval Academy. The focus variable Parent Status indicated whether or not the case was from an intact home or a divorced home. Each independent variable is described below, with reference to their origin from the IR data dictionary (United States Naval Academy, 2003a).

Table 1. Independent Variables

Variable	Type of Data	Range of Values
Minority Status	Nominal	Non-minority/Minority (0-1)
Gender Status	Nominal	Male/Female (0-1)
Parent Status	Nominal	Intact/Divorced (0-1)

The variable Minority Status indicated whether a case was considered a minority or not, where minority was defined as any ethnicity other than Caucasian. This variable was derived from the data dictionary variable ethnic code, which describes the AIS ethnic codes used by the Office of Admissions. Before the variable was recoded for this study, ethnicity was recorded as two-character string values. These values were CA, AF, NA, HI, AS, PU, FI, NH, and OT. All values except for CA were recoded as a numeric value of 1 for this study. The values of CA were recoded as the numeric value of 0. Because a low number of certain ethnic groups apply and get accepted to the Naval Academy, the combination of all ethnicities other than Caucasian allows for some measure of variance. All cases (n=4398) had valid entries for this variable (United States Naval Academy, 2003a).

The variable Gender Status indicated whether a case was male or female. It was derived from the IR data dictionary variable gender code. The variable was recorded in the data dictionary as a one-character string value of M or F. For this study, the variable was recoded to a numeric value of 1 for female midshipmen and as a 0 for males. All cases (n=4398) had valid entries for this variable (United States Naval Academy, 2003a).

The third independent variable, Parent Status, was the focus variable for this study. The data warehouse does not contain family background information on midshipmen other than parents' military status. Through investigations with IR, the information on family status was found in a survey that was taken each year by the freshmen (Plebe) class. This survey was conducted by the American Council for Education. The question on the survey asked the status of the students' parents. The choices were (1) married and living together, (2) not living together/divorced, and (3) one or more deceased. Because this study was not interested in parental death, those who answered (3) were filtered from the data set for all analyses. For those cases answering (1) or (2), the new variable Parent Status was created (n=4398). The variable was recoded as midshipmen from intact families with the numeric value of 0, while midshipmen from divorced families were assigned the numeric value of 1. All cases had valid entries for this variable (United States Naval Academy, 2003a).

3. Dependent Variables

The dependent variables for this study are determined to be the most applicable measures of success for midshipmen with regards to the literature on effects of parental divorce (Gately & Schwebel, 1992; Demo and Acock, 1988; Hetherington & Camara, 1988, Krantz, 1988), as well as various Naval Academy instructions and previous unpublished Naval Postgraduate School (NPS) Theses (Mishoe, 2000; United States Naval Academy, 2003b). These variables are summarized in Table 2, with reference to their origin from the IR data dictionary (United States Naval Academy, 2003a).

Table 2. Dependent Variables

Variable	Type of Data	Range of Values
Academic CQPR	Ratio	2.00 - 4.00
Military CQPR	Ratio	2.00 – 4.00
Attrition	Nominal	Attrite/Graduate (0-1)
Conduct	Nominal	None/Major (0-1)
Leadership Position	Nominal	None/3+stripes (0-1)
Varsity Letter Winner	Nominal	No/Yes (0-1)

Academic CQPR was taken from the data dictionary variable `cum_aqpr`. It is the academic cumulative quality point rating for a midshipman. This was similar to a grade point average, but was cumulative in nature. It was a numeric value that normally ranges from 0 to 4.0 but ranges from 2.01 to 4.0 in this data set. Only cases of graduated midshipman were used to analyze this variable, therefore the lowest possible CQPR a midshipman can possess and remain eligible to graduate was a 2.0. All cases for this variable (n=3503) had valid entries for Academic CQPR (United States Naval Academy, 2003a).

Military CQPR was taken from the data dictionary variable `cum_mqpr`. It is the military cumulative quality point rating for a midshipman. This was similar to a grade point average, but indicated an assigned grade in military performance vice academic performance. It was a numeric value that normally ranges from 0 to 4.0 but ranges from 2.13 to 3.91 in this data set. Only cases of graduated midshipman were used to analyze this variable, therefore the lowest possible CQPR a midshipman can possess and remain eligible to graduate was a 2.0. All cases for this variable (n=3503) had valid entries for Military CQPR (United States Naval Academy, 2003a).

Attrition indicated whether a case has remained at the Naval Academy and graduated or did not graduate. This variable was derived from the data dictionary variable `mid_status_code`, which indicated the graduation status associated with a midshipman. The original variable consisted of two-character string values of 41, 40, and 30. The values 41 and 40 indicated that the case graduated while the value 30 indicated a non-graduate or attrite. Those with a 40 or 41 were coded as the numeric value 0, and the cases coded as 30 were recoded as the numeric value 1. All cases (n=4398) had valid entries for this variable (United States Naval Academy, 2003a).

The variable Conduct identified whether or not a midshipman had committed and was found guilty of a major conduct violation. It was derived from the data dictionary variable `leve_adj` which was recorded as a five-character string value of MAJOR for major conduct offenses. The variable was recoded by assigning the numeric value of 1 to

cases with the string MAJOR present. All other cases were assigned the numeric value of 0. All cases used for this dependent variable (n=3503) had valid entries (United States Naval Academy, 2003a).

The dependent variable Leadership Position indicated whether a midshipman held a position of leadership within the Brigade. A position of leadership was signified by a billet that required the rank of Midshipman Lieutenant (three stripes) or above. These ranks were held by seniors or First Class Midshipmen. Additionally the ranks of First Sergeant and Sergeant Major, ranks held by juniors or Second Class Midshipmen, were included in the leadership positions as well. This variable was derived from the Data Dictionary variable rank which is a four-character string value that denotes the ranks of LT, LCDR, CDR, CAPT, 1SGT, and SMAJ. The data from IR had one of these values if the case held a leadership position of interest or a null value if no position was held. If any of the six previously mentioned values were present, the case was recoded to the numeric value 1. If a null value was present, the case was recoded to a numeric value of 0. This variable had valid entries (n=4398) for all cases (United States Naval Academy, 2003a).

The final dependent variable, Varsity Letter Winner, indicated whether a midshipman had participated and competed on a varsity athletic team. It was derived from the data dictionary variable varsity, and was originally a two-character string value denoting a Yes or No. The variable was renamed as Varsity Letter Winner, with the Yes values being recoded to numeric values of 1. The No values were recoded into numeric values of 0. All cases of this variable (n=4398) had valid entries (United States Naval Academy, 2003a).

4. Descriptive Statistics

Table 3 summarizes the frequencies for all discrete variables (dependent and independent) while Table 10 summarizes the descriptive statistics for the continuous variables.

Table 3. Discrete Variable Frequencies

Minority Status	Frequency	Percent	Valid Percent	Cumulative Percent
Minority	784	17.8	17.8	17.8
Non-Minority	3614	82.2	82.2	100.0
Gender				
Female	741	16.8	16.8	16.8
Male	3657	83.2	83.2	100.0
Parent Status				
Divorced	947	21.5	21.5	21.5
Intact	3451	78.5	78.5	100.0
Attrition				
Attrite	895	20.4	20.4	20.4
Graduate	3503	79.6	79.6	100.0
Conduct				
Major Offense	1120	25.5	25.5	25.5
None	3278	74.5	74.5	100.0
Leadership Position				
Yes	770	17.5	17.5	17.5
No	3628	82.5	82.5	100.0
Varsity Letter Winner				
No	3458	78.6	78.6	78.6
Yes	940	21.4	21.4	100.0

Table 4. Descriptive Statistics for Continuous Variables

Variable	N	Range	Min	Max	Mean	Std.	Var.	Skewness	Std. Error	Kurtosis	Std. Error
Academic CQPR	3503	1.99	2.01	4.00	2.97	.474	.224	.186	.041	-.815	.083
Military CQPR	3503	1.78	2.13	3.91	3.14	.324	.105	-.190	.041	-.567	.083

C. REGRESSION THEORY

1. Logistic Regression

Logistic regression allows the prediction of a discrete outcome such as group membership from a set of discrete variables. It allows the evaluation of odds (or probability) of membership in one of the groups (e.g. attrition) based on the combination of values of the predictor variables (e.g. white, female midshipman of divorce). The following is some basic theory of the logistic regression as explained by Tabachnick & Fidell (2001).

Because the logistic regression is a non-linear model, the equations used to describe the outcomes are slightly more complex than those for the multiple regression. The outcome variable, Y , is the probability of having one outcome or another based on the best linear combination of independent variables, with two outcomes:

$$Y_i = e^u / (1 + e^u)$$

Where Y_i is the estimated probability that the i th case ($i=1, \dots, n$) is in one of the categories and u is the usual linear regression equation:

$$u = A + B_1X_1 + B_2X_2 + \dots + B_kX_k$$

with constant A , coefficients B_j , and predictors, X_j for k predictors ($j = 1, 2, \dots, k$). This linear regression equation creates the logit, or log of the odds:

$$\ln(Y / (1 - Y)) = A + \sum B_j X_{ij}$$

or more simply the natural log (\log_e) of the probability of being in one group divided by the probability of being in the other group. Coefficients are estimated by converging on values that maximize the likelihood of obtaining observed frequencies (Tabachnick & Fidell, 2001).

Logistic regression can be used to compare and fit models. The simplest (and worst fitting) model includes only the constant and none of the predictors. The most complex (and best fitting) model includes the constant, all predictors, and interactions among predictors. Often not all predictors are related to the outcome. The researcher uses goodness-of-fit tests to choose the model that does the best job of prediction with the fewest predictors.

The goodness-of-fit for a logistic regression is determined by the chi-squared statistic (χ^2). The chi-squared statistic is normally used in judging the independence of two variables. It is limited by sample size, the extent to which it departs from independence, and reveals nothing about how two variables are related, just the extent to which they are not. In order to use χ^2 it must be modified to avoid these limitations (Norusis, 2002). It is calculated on the difference in the log-likelihoods between the model including independent variables and the model including only the constant (A) (Tabachnick & Fidell, 2001).

Logistic regressions take a few different forms. There are direct, hierarchical, and stepwise logistic regressions. Direct logistic regressions are utilized when there is no hypothesis for the model. All independent variables are entered at the same time, and the outcome will show each independent variable's unique effect on the dependent variable. The sequential, or hierarchical logistic regression, is used when certain independent variables, which research shows as significant, must be controlled for. The researcher can choose the order in which the variables are entered into the regression, leaving the focus variable as the final independent variable entered. In a stepwise logistic regression, the inclusion and exclusion of the independent variables are determined strictly by statistical test. The researcher has no input as to which variables are used or the order in which they are entered (Tabachnick & Fidell, 2001).

The major limitation for a logistic regression remains that the dependent variable must be discrete. Additionally, there must be an adequate number of cases, in relation to the number of independent variables. Outliers and multicollinearity will greatly affect the logistic regression. Finally, it must be remembered that the outcome of the logistic regression, showing significance among variables, is not proof of causality (Tabachnick & Fidell, 2001).

2. Linear Regression

The linear multiple regression is used to evaluate the relationship between a continuous dependent variable and multiple continuous independent variables. The purpose is to predict the value of the dependent variable, given values for the independents. (Tabachnick & Fidell, 2001).

The equation for the linear regression is far simpler than that of the logistic regression, due to linearity. This equation takes the following form:

$$Y = A + B_1X_1 + B_2X_2 + \dots + B_kX_k$$

where Y is the predicted value on the dependent variable, A is the Y intercept (the value of Y when all the X values are zero), the X s represent the independent variables, and the B s are the coefficients assigned to each of the independent variables during the regression. In order to correctly attain the regression equation, the sum of the squared differences between the actual and predicted Y values for k cases will be minimized (Tabachnick & Fidell, 2001).

To establish the accuracy of the linear combination of independent variables, or how well they predict the dependent variable, a multiple correlation (R) is calculated. R is a Pearson product-moment correlation between the predicted dependent variable scores and the actual scores. The R will range from 0 to 1. The R alone indicates the presence of a simple relationship. This correlation does not signify causality (Green, Salkind, & Akey, 2000).

Linear regressions can also be direct, hierarchical, or stepwise types. Some of the limitations for linear regressions are different from logistic regressions. For the linear regression, both the dependent and independent variables must be continuous, with an assumed linear relationship between the two. Too many or too few cases may confound

the results of a linear regression and in addition to the necessity for the absence of outliers and multicollinearity, the absence of singularity is assumed. Normality, homoscedasticity, and independence of errors must also be assumed. Causality can not be implied by the outcome of a linear regression.

D. MODEL OF REGRESSIONS, FUNCTIONS

1. Logistic Regression

Of the six dependent variables utilized in this study, four are discrete in nature: Conduct, Attrition, Leadership Position, and Varsity Letter Winner. As discussed in the Regression Theory section, these variables are discrete, and therefore require analysis by logistic regression.

The independent variables will be entered into the regression hierarchically, in three separate steps. Multiple steps will allow for a determination of the unique effect by each independent variable on the variance of the dependent variable. Each entry will take into account the unique effect of the previous independent variable. The final result will then include the shared variance between the groups of independent variables (Norton, 2004).

Table 5 shows the order in which the independent variables were entered into the regression. In each step, the newly entered variable is in bold text. The first step shows the independent variable, Minority Status, as being entered into the regression. Minority Status has been determined by some of the reviewed literature to be significant in cases of parental divorce (Nielsen, 1999). Step 2 shows Gender Status, another demographic independent variable, which has been found to be significant when determining the effects of parental divorce on children (Fry & Addington, 1985; Heatherington, Cox, & Cox, 1978; Wallerstein & Kelly, 1980). Finally, step 3 shows the entry of Parental Status, the focus variable for this study. By entering this independent variable last in the final step, it is possible to determine the unique variance in the dependent variable accounted for by the parental status of the midshipman. By controlling for Minority Status and Gender Status first, variables known to be significant, it can be determined that the variance is unique for the focus variable Parental Status.

Table 5. Order of Independent Variable Entry into Logistic Regression

Step 1	Step 2	Step 3
Minority Status	Minority Status	Minority Status
	Gender Status	Gender Status
		Parental Status

The results of each logistic regression will be analyzed first in whole, then by individual variable. Statistical significance (p) is the initial statistic that must be analyzed, first to determine if the model is significant, then to determine if the variables are significant. If variables are found to be significant, the chi-squared value (χ^2) and the Nagelkerke R^2 value will be examined to determine goodness of fit. For the individual variables, the significance (p) will be checked to determine the significance within the step, followed by the Wald statistics (z) and the odds ratio to determine the weight of the variables (Norton, 2004).

2. Linear Regression

There are two dependent variables that are continuous and require the use of the multiple (linear) regression. These variables are Academic CQPR and Military CQPR. As discussed in the Regression Theory section, when the dependent variables are continuous, the linear regression may be used. It is also necessary, when using a linear regression, that the independent variables be continuous. Minority and Gender Status, as well as Parental Status, are variables that are dichotomous in nature. However, these variables have values that are either 0 or 1 and can be treated as continuous for this analysis, with a range from 0 to 1 (Norton, 2004).

The independent variables in the linear regression will be entered hierarchically, as they were in the logistic regression. Again, the purpose of separate steps is to determine the unique effect that the independent variable has on the variance of the dependent variable. Steps 2 and 3 will determine the effect of each individual independent variable, taking into consideration the variables entered before. The final

result will also include the shared variance between the groups of independent variables. Table 5 shows that the order of entry for independent variables will be the same for the linear regression as it was for the logistic regression (Norton, 2004).

The results of each linear regression will be analyzed first in whole, then by individual variable. Statistical significance (p) is the initial statistic that must be analyzed, first to determine if the model is significant, then to determine if the variables are individually significant. If variables are found to be significant, the f value and the Adjusted R^2 value will be examined to determine goodness of fit. For the individual variables, the significance (p) will be checked to determine the significance within the step, followed by the standardized regression coefficients (beta) to determine the weight of the variables (Norton, 2004).

E. CHAPTER SUMMARY

In this chapter, the data set was fully explained, including a clarification of all variables and how they were derived. Following the description of both independent and dependent variables, descriptive statistics for each were presented. Next, a discussion of regression theory was presented, which was then followed by the justification of the models used in this study. The next chapter (IV) will utilize the logistic and linear regressions to analyze the data set, in which the results of the regressions will be presented. The purpose is to determine any unique effect that parental divorce may have on performance measures of midshipmen.

IV. DATA ANALYSIS

A. INTRODUCTION

This chapter presents results of the data analyses. In the first section, first-order, bivariate correlations of the variables are presented. In the remaining sections, linear and logistic regression results are presented for military performance, academic performance, conduct/behavior, attrition, leadership positions, and varsity athletic participation. The final section will present a summary of significant results from each analysis.

B. CORRELATIONAL ANALYSIS

Pearson correlation coefficients were computed for all variables in this study. Table 6 presents the means, standard deviations, and first-order, bivariate correlation coefficients for each of the nine variables included in the study. Examination of the correlation matrix shows 30 out of 36 correlations computed were statistically significant at the 0.05 level. Means and standard deviations for Minority Status, Gender Status, Parent Status, Conduct, Attrition, Leadership Position, and Varsity Letter Winner were not computed because these variables are of a dichotomous nature.

Table 6. Correlation Matrix

	Mean	Std.	1	2	3	4	5	6	7	8	9
1. Parent Status			1								
2. Gender Status			.005	1							
3. Minority Status			.123**	.019	1						
4. Academic CQPR	2.97	0.474	-.056**	-.038*	-.157**	1					
5. Military CQPR	3.14	0.324	-.072**	-.032*	-.145**	.719**	1				
6. Attrition			.043**	.098**	.052**	-.528**	-.489**	1			
7. Conduct			.010	-.043**	.044**	-.060**	-.166**	-.074**	1		
8. Leadership Position			-.024	-.027	-.057**	.279**	.356**	-.225**	-.063**	1	
9. Varsity Letter Winner			-.045**	.079**	-.044**	.037*	.100**	-.166**	.045**	-.017	1

Note: The numbers in the top block of each column represent each variable as listed in first column.

Table 6 shows that Parent Status is positively correlated with Minority Status and Attrition. These results indicate that midshipmen who come from divorced families are more likely to be a minority. In addition, those who attrite from the Naval Academy are more likely to be from a divorced family. Conversely, Parent Status was negatively correlated with Academic CQPR, Military CQPR, and Varsity Letter Winner. These results indicate that midshipmen from divorced families are more likely to have lower military and academic cumulative quality point ratings. Additionally, minority midshipmen are less likely to participate in varsity athletics.

Some additional correlations of interest are correlations between demographic variables and the noted performance measures. The variable Minority Status, which is dichotomous in nature, is positively correlated with attrition and Conduct, as well as Parent Status, noted above. These results indicate that midshipmen who are considered minorities are more likely to commit a major conduct offense, or become an attrite from the Naval Academy. Minority Status was negatively correlated with Academic and Military CQPRs, Varsity Letter Winner, and Leadership Position. These results indicate that midshipmen who are considered minorities are more likely to have lower academic and military quality point rating, less likely to be varsity letter winners, and less likely to hold a position of leadership among the Brigade.

The final demographic variable, Gender Status, which is a dichotomous variable, is positively correlated with Attrition and Varsity Letter Winner. These results indicate that female midshipmen are more likely to become an attrite as well as participate in varsity athletics. Military and Academic CQPRs, Conduct, and Leadership Positions are all negatively correlated with Gender Status. These results indicate that female midshipmen are more likely to have lower grades, less likely to commit major conduct offenses, and less likely to hold positions of leadership than their male counterparts.

C. REGRESSION ANALYSIS OF PARENTAL STATUS AND ACADEMIC PERFORMANCE

Table 8 presents the results of the hierarchical linear regression analysis of Parent Status on academic cumulative quality point ratings. This analysis controls for the demographic variables Minority Status and Gender Status, which have been found to be significant in previous studies, for the purpose of uncovering any unique effect that

Parent Status may have on Academic CQPR. Table 8 shows statistics for each of the independent variables entered into the regression in three separate steps, together making the entire model. Beta weights with standard error, standardized betas, t statistics and the significance of each variable in the model are displayed. Variables entered in individual steps are depicted in bold on the respective step.

Results of the hierarchical linear regression were not statistically significant for Parent Status to the 0.05 level ($p = .197$). This indicates that there is no significant relationship between midshipmen who have experienced parental divorce and academic cumulative quality point ratings. See Table 7 for descriptive statistics regarding CQPRs and Parent Status.

Minority Status and Gender Status were controlled for in the first two steps of the model. Minority Status was statistically significant in the regression, which indicates that minorities are more likely to have lower academic cumulative quality point ratings. The beta for this variable is $\beta = -.258$ which shows a significant relationship between Minority Status and Academic CQPR. Gender Status was not statistically significant in the regression, indicating that gender is not related to academic performance at the Naval Academy, at least in this specific sample.

Table 7. Descriptive Statistics for Parent Status and CQPRs

	Mean	Std. Deviation
Intact		
Academic CQPR	2.98	.474
Military CQPR	3.15	.324
Divorced		
Academic CQPR	2.92	.472
Military CQPR	3.10	.323

Table 8. Linear Regression Results for Academic Cumulative Quality Point Rating

Step	Independent Variable	β	Std. Error	Beta	<i>t</i>	Sig.
1	(Constant)	3.014	.009		350.737	.000
	Minority Status	-.258	.021	-.204	-12.330	.000
2	(Constant)	3.014	.009		328.572	.000
	Minority Status	-.258	.021	-.204	-12.326	.000
	Gender Status	.001	.022	.001	.071	.943
3	(Constant)	3.018	.010		305.886	.000
	Minority Status	-.255	.021	-.201	-12.067	.000
	Gender Status	.001	.022	.001	.048	.961
	Parent Status	-.025	.020	-.022	-1.291	.197

Note: Adjusted R^2 for steps 1, 2, and 3 = .041

D. REGRESSION ANALYSIS OF PARENTAL STATUS AND MILITARY PERFORMANCE

Table 9 presents the results of the hierarchical linear regression analysis of Parent Status on military cumulative quality point ratings. This analysis controls for the demographic variables Minority Status and Gender Status, which have been found to be significant in previous studies, for the purpose of uncovering any unique effect that Parent Status may have on Military CQPR. Table 9 shows statistics for each of the independent variables entered into the regression in three separate steps, together making the entire model. Beta weights with standard error, standardized betas, *t* statistics and the significance of each variable in the model are displayed. Variables entered in individual steps are depicted in bold on the respective step.

Results of the hierarchical linear regression were not statistically significant for Parent Status to the 0.05 level ($p = .056$). Although this indicates that there is no statistically significant relationship between midshipmen who have experienced parental divorce and military cumulative quality point ratings, the value ($p = .056$) is fairly close to the cutoff of 0.05. When comparing the Military CQPR means of midshipmen from divorced families (mean = 3.09) to those from intact families (mean = 3.15), there is a

noticeable trend. These lower Military CQPRs among midshipman from divorced families may not be drastic but should be taken into account. See Table 7 for descriptive statistics regarding CQPRs and Parent Status.

Minority Status and Gender Status were controlled for in the first two steps of the model. Minority Status was statistically significant in the regression ($p = .000$), which indicates that minorities are more likely to have lower military cumulative quality point ratings. The beta for this variable is $\beta = -.175$ which shows a statistically significant relationship between Minority Status and Military CQPR. Gender Status was not statistically significant in the regression ($p = .295$), indicating that gender is not related to military performance at the Naval Academy, at least in this specific sample.

Table 9. Linear Regression Results for Military Cumulative Quality Point Rating

Step	Independent Variable	β	Std. Error	Beta	t	Sig.
1	(Constant)	3.166	.006		538.764	.000
	Minority Status	-.178	.014	-.205	-12.401	.000
2	(Constant)	3.164	.006		504.462	.000
	Minority Status	-.178	.014	-.206	-12.425	.000
	Gender Status	.016	.015	.018	1.081	.280
3	(Constant)	3.169	.007		469.739	.000
	Minority Status	-.175	.014	-.202	-12.090	.000
	Gender Status	.016	.015	.017	1.047	.295
	Parent Status	-.026	.013	-.032	-1.913	.056

Note: Adjusted R^2 for steps 1 and 2 = .042, step 3 = .043

E. REGRESSION ANALYSIS OF PARENTAL STATUS AND ATTRITION

Table 10 presents the results of the hierarchical logistic regression analysis of parental status on attrition rates. This analysis controls for the demographic variables Minority Status and Gender Status, which have been found to be significant in previous studies, for the purpose of uncovering any unique effect that Parent Status may have on attrition rates. Table 10 displays statistics for each of the independent variables entered

into the regression. Beta weights with standard error, Wald coefficients, degrees of freedom, the significance, and odds ratios are included in the table. Variables entered in each step are depicted in bold for the respective step. Descriptive statistics show midshipmen from intact families becoming attrites at a rate of 19.4 % while those from divorced families attrite at a rate of 23.7 %.

The results of the hierarchical logistic regression analysis are significant ($p=.015$), which indicates that parental divorce is a predictor of not graduating from the Naval Academy. It is important to note that the impact of Parent Status on attrition rates was significant even after controlling for the demographic variables. This model accounts for 2.0% of the variance in attrition rate (Nagelkerke $R^2=.020$). Midshipmen from divorced families are 1.24 times more likely to not graduate than those from intact families.

Additionally, Minority Status and Gender Status both significantly predicted attrition rates. The results indicate that female midshipmen, as well as minority midshipmen, are less likely to graduate from the Naval Academy. These results are in agreement with similar studies utilizing the same variables to analyze midshipmen performance (Norton, 2004).

Table 10. Logistic Regression Results for Attrition

Step	Independent Variable	β	Std. Error	Wald	df	Sig.	Exp(B)
1	(Constant)	-1.426	.042	1148.018	1	.000	.240
	Minority Status	.321	.093	11.965	1	.001	1.378
2	(Constant)	-1.537	.047	1087.642	1	.000	.215
	Minority Status	.312	.093	11.201	1	.001	1.366
	Gender Status	.586	.047	40.965	1	.000	1.796
3	(Constant)	-1.581	.050	985.214	1	.000	.206
	Minority Status	.283	.094	9.073	1	.003	1.328
	Gender Status	.586	.092	40.940	1	.000	1.797
	Parent Status	.216	.089	5.880	1	.015	1.241

Note: Nagelkerke R^2 for step 1 = .004, for step 2 = .018, and for step 3 = .020

F. REGRESSION ANALYSIS OF PARENTAL STATUS AND CONDUCT/BEHAVIOR

Table 11 presents the results of the hierarchical logistic regression analysis of parental status on conduct/behavior. This analysis controls for the demographic variables Minority Status and Gender Status, which have been found to be significant in previous studies, for the purpose of uncovering any unique effect that Parent Status may have on conduct/behavior. Table 11 displays statistics for each of the independent variables entered into the regression. Beta weights with standard error, Wald coefficients, degrees of freedom, the significance, and odds ratios are included in the table. Variables entered in each step are depicted in bold for the respective step. Descriptive statistics show midshipmen from intact families committing major conduct offenses at a rate of 25.2 % while those from divorced families commit at a rate of 26.3 %.

The results of the hierarchical logistic regression analysis are not significant ($p=.758$), which indicates that parental divorce is not a predictor for a midshipman to commit a major conduct offense.

The results of the logistic regression show that the independent variables Minority Status and Gender Status are statistically significant ($p = .004$ for both). These results indicate that minority midshipmen are 1.29 times more likely to commit a major conduct offense than non-minority midshipmen. Female midshipmen, however, are less likely to commit major conduct offenses than males.

Table 11. Logistic Regression Results for Conduct

Step	Independent Variable	β	Std. Error	Wald	df	Sig.	Exp(B)
1	(Constant)	-1.122	.039	842.637	1	.000	.326
	Minority Status	.255	.087	8.526	1	.004	1.290
2	(Constant)	-1.078	.041	685.341	1	.000	.340
	Minority Status	.260	.087	8.874	1	.003	1.297
	Gender Status	-.281	.097	8.345	1	.004	.755
3	(Constant)	-1.083	.044	597.842	1	.000	.339
	Minority Status	.257	.088	8.500	1	.004	1.293
	Gender Status	-.281	.097	8.349	1	.004	.755
	Parent Status	.026	.084	.095	1	.758	1.026

Note: Nagelkerke R^2 for step 1 = .003, for step 2 = .006, and for step 3 = .006

G. REGRESSION ANALYSIS OF PARENTAL STATUS AND LEADERSHIP POSITIONS HELD

Table 12 presents the results of the hierarchical logistic regression analysis of parental status on leadership positions held. This analysis controls for the demographic variables Minority Status and Gender Status, which have been found to be significant in previous studies, for the purpose of uncovering any unique effect that Parent Status may have on leadership. Table 12 displays statistics for each of the independent variables entered into the regression. Beta weights with standard error, Wald coefficients, degrees of freedom, the significance, and odds ratios are included in the table. Variables entered in each step are depicted in bold for the respective step. Descriptive statistics show midshipmen from intact families attaining leadership positions at a rate of 18.0 % while those from divorced families at a rate of 15.7 %.

The results of the hierarchical logistic regression analysis are not significant ($p=.241$). These results show that the experience of parental divorce for this sample of midshipmen does not impair or improve the ability to hold certain positions of leadership within the Brigade.

The results of the logistic regression show that the independent variable Minority Status is statistically significant ($p = .000$) while the variable Gender Status is not significant ($p = .089$). These results indicate that minority midshipman are less likely to hold specific leadership positions than non-minority midshipmen. Additionally, female midshipmen are less likely to hold these positions as well.

Table 12. Logistic Regression Results for Leadership Position

Step	Independent Variable	β	Std. Error	Wald	df	Sig.	Exp(B)
1	(Constant)	-1.482	.043	1197.424	1	.000	.227
	Minority Status	-.428	.115	13.904	1	.000	.652
2	(Constant)	-1.452	.046	1000.004	1	.000	.234
	Minority Status	-.426	.115	13.752	1	.000	.653
	Gender Status	-.190	.111	2.913	1	.088	.827
3	(Constant)	-1.430	.049	840.005	1	.000	.239
	Minority Status	-.411	.116	12.635	1	.000	.663
	Gender Status	-.189	.111	2.900	1	.089	.828
	Parent Status	-.118	.100	1.375	1	.241	.889

Note: Nagelkerke R^2 for step 1 = .006, for step 2 = .007, and for step 3 = .007

H. REGRESSION ANALYSIS OF PARENTAL STATUS AND VARSITY ATHLETIC PARTICIPATION

Table 13 presents the results of the hierarchical logistic regression analysis of parental status on Varsity athletic participation. This analysis controls for the demographic variables Minority Status and Gender Status, which have been found to be significant to parental divorce in previous studies, for the purpose of uncovering any unique effect that Parent Status may have on varsity athletic participation. Table 13 displays statistics for each of the independent variables entered into the regression. Beta weights with standard error, Wald coefficients, degrees of freedom, the significance, and odds ratios are included in the table. Variables entered in each step are depicted in bold

for the respective step. Descriptive statistics show midshipmen from intact families participating in varsity athletics at a rate of 22.3 % while those from divorced families participate at a rate of 17.8 %.

The results of the hierarchical logistic regression analysis are significant ($p=.007$), which indicates that midshipmen experiencing parental divorce are less likely to participate in varsity athletics than those from intact families. It is important to note that the impact of Parent Status on varsity athletic participation was significant even after controlling for the demographic variables. This model accounts for 1.5% of the variance in Varsity Letter Winner (Nagelkerke $R^2=.015$). Midshipmen from divorced families are 1.23 times less likely to participate in varsity athletics than those from intact families.

Additionally, Minority Status and Gender Status both significantly predicted participation or non-participation in varsity athletics. The results indicate that female midshipmen are much more likely to play a varsity sport. The results show that they are 1.63 times more likely to participate than males. Minority midshipmen, while statistically significant, are less likely to participate in varsity athletics than non-minorities.

Table 13. Logistic Regression Results for Varsity Letter Winners

Step	Independent Variable	β	Std. Error	Wald	df	Sig.	Exp(B)
1	(Constant)	-1.253	.040	980.497	1	.000	.286
	Minority Status	-.299	.102	8.578	1	.003	.741
2	(Constant)	-1.342	.044	923.395	1	.000	.261
	Minority Status	-.311	.103	9.198	1	.002	.733
	Gender Status	.485	.091	28.113	1	.000	1.623
3	(Constant)	-1.296	.047	760.313	1	.000	.274
	Minority Status	-.279	.103	7.318	1	.007	.756
	Gender Status	.486	.091	28.257	1	.000	1.626
	Parent Status	-.255	.095	7.197	1	.007	.775

Note: Nagelkerke R^2 for step 1 = .003, for step 2 = .013, and for step 3 = .015

I. CHAPTER SUMMARY

The purpose of this chapter was to present results from the correlation and regression analyses. In the first section, a correlation matrix (Table 6) showed first-order, bivariate correlations between all variables utilized in this study. Each positive and negative correlation that was statistically significant at the .05 level was reported. Following the correlation matrix, the results of the two hierarchical linear and four logistic regressions were reported. Conclusions from these results will be drawn in Chapter V.

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V. CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

This chapter draws conclusions regarding the study's primary results. In the first section, the analyses for each variable are discussed and previous literature based on divorce outcomes is utilized to explain those results. In the second section, implications for this study are considered; implications for application are a particular focus. The third section describes limitations specific to this study. In the final section, recommendations for further study are offered.

B. SUMMARY AND EXPLANATION OF FINDINGS

1. Summary and Explanation of Findings for Academic Cumulative Quality Point Rating (CQPR)

The majority of previous studies regarding the academic performance of children from divorced families have revealed significantly lower performance than children who live with continuously married parents (Gately & Schwebel, 1992; Demo & Acock, 1988; Hetherington & Camara, 1988; Krantz, 1988). Most likely, the stressor of dealing with a divorce, including mood problems, lower financial functioning, the need to work, and chaotic relationships with parent causes a child to place less importance on his or her academic achievement.

In this study, there was a negative correlation between Parent Status and Academic CQPR. More simply, midshipmen who came from divorced families tend to have lower academic cumulative grades than midshipmen from intact families. These findings were congruent with the literature in that there was a significant negative relationship between academic performance and the experience of divorce.

The results of a linear hierarchical regression showed significance for the independent variable Minority Status, however it did not show significance for Gender Status or Parent Status. Although it was found that a negative correlation existed between Parent Status and Academic CQPR, the regression showed that coming from a divorced family is not significantly predicative of academic performance when the effects of gender and minority status are controlled.

2. Summary and Explanation of Findings for Military Cumulative Quality Point Rating (CQPR)

Military CQPR measures the military performance of midshipmen. The grade is determined and assigned by the Company Officer who utilizes many data sources to determine the grades. Maturity, the act of accepting responsibility, social interaction, confidence, conduct and behavior, and overall effort and performance are all factors that can enhance or impair the perceived military performance of a midshipman. Results from relevant literature show that some negative effects of divorce can be seen in the areas of maturity and self-confidence (Ambert, 1996; Hetherington & Jodl, 1994; Wallerstein, 1991; Zill, 1994), interpersonal relationships (Gately & Schwebel, 1992; Demo & Acock, 1988; Hetherington & Camara, 1988), conduct and behavior (Gately & Schwebel, 1992; Wallerstein, 1987), and adjustment difficulties (Lopez, Campbell, & Watkins, 1986). Deficits in any of these domains in midshipmen can be detrimental to the military performance grade.

In this study, a negative correlation was found between the variables Parent Status and Military CQPR. More specifically, midshipmen who come from divorced families tend to have lower cumulative military grades than midshipmen from intact families. These findings were consistent with the literature in that there was a negative relationship between the noted components of military performance and the experience of divorce.

The results of the linear hierarchical regression showed significance for the independent variable Minority Status, however they did not show significance for Gender Status or Parent Status. Although a negative correlation existed between Parent Status and Academic CQPR, the regression showed that coming from a divorced family was not a significant predictor lower academic performance at USNA. Important here was how close the probability value ($p=.056$) was to the cutoff value of .050. These results indicated a trend for parental divorce and military performance at USNA.

Military CQPR is a combination of many characteristics and behaviors displayed by midshipmen. Any one of these characteristics may or may not be the direct cause of receiving a lower military grade. For example, midshipmen coming from divorced families may be receiving lower grades due to lower self-confidence, poorer interpersonal relationships, or bad conduct.

3. Summary and Explanation of Findings for Parent Status and Attrition

When a midshipman is separated or resigns from the Naval Academy, it can be for many reasons. He or she can choose to resign voluntarily for personal or academic reasons, or may not leave on his or her own accord and can be separated by the administration. Regardless of the reason, the attrition of midshipmen can be a useful piece of information. This study does not distinguish the type of attrition, but considers all cases regardless of cause. Hetherington and Stanley-Hagan (1999) report that adolescent children from divorced homes, compared to their peers in non-divorced homes, were two to three times more likely to drop out of school. If the experience of divorce was determined to affect the attrition of midshipmen, the many people responsible for the well-being of midshipmen would be better informed and better prepared to ask the right questions.

It was discovered that a positive correlation exists between the variables Parent Status and Attrition. Midshipmen who come from divorced families tend to have a higher probability of dropping out than midshipmen from intact families. These findings were in agreement with the literature in that there was a positive relationship between dropping out of school and the experience of divorce (Hetherington & Stanley-Hagan, 1999). The Pearson correlation coefficient was significant to the .01 level for this test.

Results of a logistic hierarchical regression showed significance to the .05 level for the independent variables Minority Status and Gender Status. Additionally, the variable Parent Status was statistically significant. The logistic regression showed that even after controlling for Minority Status and Gender Status, the parental divorce experience of a midshipman is significant when predicting resignation or separation.

There could be many reasons for this result. Midshipmen could be deciding to leave to assist single mothers with siblings if resigning, or the separation cases could be more populated by midshipmen suffering the emotional, motivational, or performance deficits associated with divorce.

4. Summary and Explanation of Findings for Parent Status and Conduct/Behavior

Conduct or behavior problems are frequently associated with divorce. Many studies report that children who experience divorce demonstrate conduct and behavior issues throughout the childhood and early adolescent years, while late adolescents and early adults demonstrate higher rates of delinquency, substance abuse, and early pregnancy (Demo & Acock, 1988; Hetherington & Camara, 1988; Hetherington and Stanley-Hagan, 1999; Wallerstein & Kelly, 1980). Regardless of the type of behavioral disturbances, it is important to determine if conduct is affected by the experience of divorce. In this sample, conduct or behavior of midshipmen was measured by the committal of a major conduct offense while at the Naval Academy. Some examples of the most common major conduct offenses are underage drinking, sexual misconduct, unauthorized absences, violation of the Uniform Code of Military Justice (UCMJ), and violation of written orders. The charges are not distinguished in this sample of midshipmen, only the recording of an offense.

In this study, no correlation was found between the variables Parent Status and Conduct. Midshipmen who come from divorced families do not tend to commit major conduct offenses with greater frequency than midshipmen from intact families. These findings run counter to the literature.

The results of a logistic hierarchical regression showed significance to the .05 level for the independent variables Minority Status and Gender Status, however they did not show significance for Parent Status. The logistic regression shows that coming from a divorced family is not significant to the .05 level and is not a significant predictor behavioral disturbances at USNA.

These results indicated that midshipmen from divorced families were not more likely than peers from intact homes to act-out behaviorally. These results were consistent with a small proportion of literature that identified some favorable outcomes in children of divorce. Gately and Schwebel (1992) discussed areas in which they had found such beneficial outcomes; the most applicable of those areas included increased maturity and decision making in stressful situations. Other researchers found some young adults to be more interpersonally skilled and able to deal with stressful and demanding situations

(Hetherington, 1989). Perhaps the midshipmen who experienced divorce in this sample, had been more successful at dealing with tough situations and were able to demonstrate self-control when faced with an opportunity to misbehave. It is also likely that midshipmen candidates with serious behavior problems would not gain admission to USNA in the first place. Thus, USNA midshipmen represented a very truncated range on the misbehavior continuum.

5. Summary and Explanation of Findings for Parent Status and Leadership Positions Held

By holding a position of leadership in the Brigade, midshipmen demonstrate an ability to accept more responsibility, demonstrate more maturity, and overall better performance than the average midshipman. This variable includes all midshipmen who attained the ranks of Midshipman Lieutenant and above. Also included are Second Class midshipmen who held the ranks of First Sergeant or Sergeant Major. Attainment of these ranks takes discipline and maturity, as well as above average overall performance.

In this study, no significant correlation was found between the variables Parent Status and Leadership Position. Midshipmen who come from divorced families do not tend to hold positions of leadership any more, or any less, than midshipmen from intact families. Results of a logistic hierarchical regression showed significance to the .05 level for the independent variable Minority Status, however they did not show significance for Gender Status or Parent Status. The logistic regression indicates that coming from a divorced family is not itself a significant predictive factor in attaining a leadership position at USNA.

6. Summary and Explanation of Findings for Parent Status and Varsity Athletic Participation

In all of the literature reviewed for this study, there is no applicable research to support a hypothesis regarding the connection between athletic performance and divorce experience. At the Naval Academy, athletic performance is taken very seriously, and is considered one of several essential contexts for learning leadership. A midshipman playing a varsity sport at USNA can benefit greatly from the experience. It is important, therefore, to understand the effect that divorce has on engagement in athletics. Divorce may not only affect physical performance and the amount of time parents can devote to children's athletics, but divorce may also affect the amount of time that an adolescent can

spend playing in high school, depending on the newly assigned responsibilities. Therefore, it was hypothesized that midshipman from divorced families will be less likely to participate in varsity athletics.

In this study, a negative correlation was found between the variables Parent Status and Varsity Letter Winner. Specifically, midshipmen who came from divorced families tended to participate in Varsity Athletics significantly less often than midshipmen from intact families. Results of a logistic hierarchical regression showed significance to the .05 level for the independent variables Minority Status and Gender Status. Additionally, the variable Parent Status was statistically significant. The logistic regression indicated that even after controlling for Minority Status and Gender Status, the divorce experience of a midshipman was significant with participation in varsity athletics.

Children many times have to accept greater responsibilities due to the divorce of their parents. These excess responsibilities may include caring for siblings, or even working to earn money for the income-reduced family. Additionally, some children lose the opportunity to participate in extracurricular activities simply because the custodial parent can not afford the activity or does not have the time to transport the child to and from practice. Whatever the cause, midshipmen at USNA who have experienced divorce are less likely to participate in varsity athletics.

C. IMPLICATIONS

There are numerous reasons why a study on divorce effects among service academy students is important. This study was initially completed for the purpose of educating those who are responsible for leading midshipmen. It is important for leaders and educators to fully understand the effects that an external stressor such as parental divorce can have on subordinates and students. Because USNA is a highly selective college, most would assume that any negative effects of divorce have somehow been overcome in this population. This study shows that regardless of the resilience these young men and women have developed, parental divorce still affects them. As long as they are negatively affected, those charged with their leadership must take an interest in the subject. Counseling can be a process in which parental divorce experiences can be exposed to a leader. When Company Officers learn of divorce in a midshipman's past, he or she should be aware of some of the common effects demonstrated here at USNA.

Additionally, Company Officers will encounter midshipmen parents currently filing for divorce; this may cause the young person to experience some anger and immediate behavioral acting out. Many parents tend to wait until the children are out of the house and on their own to progress with divorce. Fortunately, when a young adult in college is forced to face his or her parents' divorce, he or she will often ascribe more blame to the parents; young adults are less apt to self-blame. In this situation, they are more likely to lament the fact that they could not prevent it (Cain, 1989). It is extremely important that a leader be aware and ready to offer assistance when a divorce situation arises with a midshipman's parents.

Another implication of this study is the importance of reviewing services offered to students who deal with divorce-related stressors. The Naval Academy offers numerous forms of counseling services. Traditionally, the Navy Chaplains have been a source of support for the many problems that midshipmen may face. Death, divorce, relationships, and even counseling for stress have been addressed by these professionals. Many assume that only religious topics are a priority to the Chaplains, but over time they have become invaluable to the institution and the midshipmen they serve for the many areas in which they offer assistance.

A second option that midshipmen have for support is the Midshipmen Development Center (MDC). The MDC exists to promote and enhance the adjustment, well-being, and professional development of midshipmen, and to provide psychological consultation and training to the U.S. Naval Academy staff responsible for midshipmen development. A wide variety of training, educational, and clinical services are provided to the midshipmen and staff to support the mission of the Naval Academy and to respond to the individual needs and goals of our diverse midshipmen population. CAPT Paige-Dobson, USN, Director of the MDC noted that this center does not conduct full scale psychological treatment, but offers a supportive atmosphere for midshipmen to cope with challenging situations, with parental divorce being common among them. The center is comparable to any college counseling facility, and offers important services to a population in need. Overall, the support services offered at the Naval Academy are more than sufficient. Midshipmen have the ability to utilize a Chaplain of common faith, or a clinical psychologist to assist with their search for coping mechanisms.

An additional implication that surfaces because of this study is the presence of resilience in midshipmen coming from divorced families. Resilience is defined by the American Psychological Association as the process of adapting well in the face of adversity, trauma, tragedy, and significant sources of stress. The young adults who are offered appointments to the Naval Academy are already among the “cream of the crop” in the nation, therefore if they have experienced family problems and divorce, it is assumed that they remained resilient in spite of the negative stressors that accompany divorce. Academic problems and behavior disturbances are minimal, or these young people most likely would not have qualified to become a midshipman.

Finally, I believe this study can contribute to the overall literature on divorce and its effects on children by uncovering effects in a unique, adaptive, and successful sample. This sample has an average SAT score of 1350, has excelled in high school, extra-curricular activities and sports, and will be the future leaders of the Navy and Marine Corps. It is significant to discover that even among these high-functioning midshipmen, those from divorced homes are more likely to attrite, and less likely to participate in varsity athletics.

D. LIMITATIONS OF THE STUDY

Although the current sample was considerably large utilizing five classes of midshipmen, the sample was not completely random. Midshipmen who did not take the ACE survey during plebe year were filtered because the focus variable (Parent Status) was obtained from those survey results (approximately 1 percent). Additionally, those midshipmen who did not offer their Social Security Numbers (SSN) on the ACE survey could not be used because the USNA data from the Office of Institutional Research could not be matched with the focus variable (less than 1 percent). These survey results were filtered as well. Another group that was filtered from the final sample were the midshipmen whose parents were not together due to one or more deaths. Parental death could be the source of many other effects on children that this study could not account for, therefore, the data was filtered from the final sample (approximately 3.4 percent). Additionally the study was limited due to the purely correlational nature of the data, as well as the small number of outcome variables available.

Another area in which the study was limited was the lack of information on the specifics of the divorce that the midshipmen experienced. Nearly all studies mention that there are multiple moderating factors within each divorce situation. The type of divorce (i.e. amiable, violent, argumentative, etc.), the living situation before and following the divorce, the socio-economic constraints following the divorce, as well as the relationship with parents following the divorce are all helpful variables for deciphering the effects of divorce.

E. RECOMMENDATIONS FOR FURTHER STUDY

In completing this study, many opportunities for additional research are revealed. The purpose of this section is to discuss some recommendations for further study that stem directly from this thesis, and which may make further contributions to the field of study.

The first recommendation is to conduct a qualitative study involving personal interviews with midshipmen volunteers who have experienced multiple types of divorce. Questions concerning support structures during and after the divorce, negative effects, and positive gains from the experience, would do well to educate us even more on the results of parental divorce among this high-achieving group. Additionally, it would allow the collection of specific information regarding the divorce that many researchers claim as moderating factors.

Another recommendation would be to utilize more variables including self reported emotional and psychological well-being questions. These questions can help to enhance our understanding of the emotions and thoughts that are specific to divorce. An example would be the American Council for Education's (ACE) Survey for the College Freshmen, from which the focus variable was obtained. Some of the questions in this survey address self-confidence, self-worth, substance-use, maturity, and responsibility.

An additional recommendation would be to conduct a longitudinal study of the same sample used in this study, measuring success in the realm of fleet performance. Fleet performance could be measured using fitness reports, self reported surveys, or comments from leaders. An additional effect of parental divorce not addressed in this study is the inability for children of divorce to establish and maintain intimate and

ongoing relationships (Ross and Mirowsky, 1999). This effect could become a variable for the sample in a longitudinal study. Because midshipmen are not allowed to marry while at USNA, a longitudinal study would allow a researcher to question the success or failure of intimate relationships or marriage among midshipmen from divorced or intact homes.

The final recommendation for further study would be to conduct the same type of research using variables that measure the ability to lead people. Using valid leadership instruments, it would be interesting to determine if these resilient midshipmen from divorced families have become better leaders or if they somehow are hindered as leaders by their experiences. Some of the few researchers that claim positive outcomes of parental divorce, report that maturity, coping mechanisms, and empathy all increase following the divorce, due to the experience of the divorce (Gately & Schwebel, 1992). If this is true then one might hypothesize that these traits, important to the art of leadership, may be creating stronger, more competent leaders in the long run. Measuring leadership ability remains a challenge for researchers.

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3. Nimitz Library
U.S. Naval Academy
Annapolis, Maryland
4. CDR Robert Proano, USN
U.S. Naval Academy
Annapolis, Maryland
5. Chaplain's Office
U.S. Naval Academy
Annapolis, Maryland
6. Midshipmen Development Center
U.S. Naval Academy
Annapolis, Maryland
7. Dr. Brad Johnson
U.S. Naval Academy
Annapolis, Maryland
8. Dr. Linda Mallory
U.S. Naval Academy
Annapolis, Maryland
9. LT Allen Siegrist, USN
U.S. Naval Academy
Annapolis, Maryland